Amendments to the Claims:

Claims 1 – 40 (cancelled)

Claim 41. (New)

A color conversion apparatus for converting an input color being in RGB color space to an output color being in RGB color space, the apparatus comprising:

a first lookup table receiving a first color element of the input color for generating a first converted color element; wherein the first color element and the first converted color element belong to the same color component;

a second lookup table receiving a second color element of the input color for generating a second converted color element; wherein the second color element and the second converted color element belong to the same color component;

a gamma correction circuit receiving a third color element of the input color for generating a third converted color element; wherein the third color element and the third converted color element belong to the same color component; and

an adder circuit coupled to the first lookup table, the second lookup table and the gamma correction circuit for summing the first converted color element, the second converted color element and the third converted color element to generate a color element of the output color;

wherein the color component is one component of RGB; and

RGB including R,G, and B components respectively representing red, green, and blue colors.

Claim 42. (New) The apparatus of claim 41, wherein the first converted color element, the second converted color element and the third color element respectively belong to different color components.

Claim 43. (New) The apparatus of claim 41, wherein one bit from the value of the first converted color element is corresponding to serial eight values of the first color element; and one bit from the value of the second converted color element is

corresponding to serial eight values of the second color element.

Claim 44. (New) The apparatus of claim 41, wherein the first lookup table is indexed by using a number of bits from values of the first color element; and the second lookup table is indexed by using the number of bits from values of the second color element.

Claim 45. (New) The apparatus of claim 44, wherein the number of bits comprise a number of most significant bits.

Claim 46. (New) The apparatus of claim 45, wherein remaining least significant bits of the first and second color elements are not utilized in generating the first and second converted color elements.

Claim 47. (New) The apparatus of claim 41, wherein the apparatus is utilized in a liquid crystal display (LCD) controller.

Claim 48. (New)

A color conversion apparatus for converting an input color being in RGB color space to an output color being in RGB color space, the apparatus comprising:

a first lookup table receiving a first color element of the input color for generating a first converted color element; wherein the first color element and the first converted color element belong to the same color component;

a second lookup table receiving a second color element of the input color for generating a second converted color element; wherein the second color element and the second converted color element belong to the same color component;

an adder circuit coupled to the first lookup table, the second lookup table for summing the first converted color element, the second converted color element and a third color element of input color to generate a temporary color element; wherein the first converted color element, the second converted color element and the third color element respectively belong to different

color components; and

a gamma correction circuit receiving the temporary color element for generating a color element of output color; wherein the color element of output color and the temporary color element belong to the same color component;

wherein the color component is one component of RGB; and

RGB including R,G, and B components respectively representing red, green, and blue colors.

Claim 49. (New) The apparatus of claim 48, wherein one bit from the value of the first converted color element is corresponding to serial eight values of the first color element; and one bit from the value of the second converted color element is corresponding to serial eight values of the second color element.

Claim 50. (New) The apparatus of claim 48, wherein the first lookup table is indexed by using a number of bits from values of the first color element; and the second lookup table is indexed by using the number of bits from values of the second color element.

Claim 51. (New) The apparatus of claim 50, wherein the number of bits comprise a number of most significant bits.

Claim 52. (New) The apparatus of claim 51, wherein remaining least significant bits of the first and second color elements are not utilized in generating the first and second converted color elements.

Claim 53. (New) The apparatus of claim 48, wherein the apparatus is utilized in a liquid crystal display (LCD) controller.

Claim 54. (New)

A method for converting an input color being in a RGB color space to an output color being in RGB color space, the method comprising:

looking up a first color element of the input color in a first lookup table to

generate a first converted color element; wherein the first color element and the first converted color element belong to the same color component;

looking up a second color element of the input color in a second lookup table to generate a second converted color element; wherein the second color element and the second converted color element belong to the same color component;

converting a third color element to generate a third converted color element by gamma correction circuit; wherein the third color element and the third converted color element belong to the same color component;

wherein one of the color elements of output color is dependent to the first, second and third converted color elements;

the first, second and third converted color elements respectively belong to different color components;

the color component is one component of RGB; and

RGB including R,G, and B components respectively representing red, green, and blue colors.

Claim 55. (New) The method of claim 54, wherein further comprising summing the first, the second and the third converted color elements;

Claim 56. (New) The method of claim 54, wherein further comprising summing the first converted color element, the second converted color element and one of the color elements of input color; wherein the first converted color element, the second converted color element and one of the color elements of input color respectively belong to different color components.

Claim 57. (New) The method of claim 54, wherein one bit from the value of the first converted color element is corresponding to serial eight values of the first color element; and one bit from the value of the second converted color element is corresponding to serial eight values of the second color element.

Claim 58. (New) The method of claim 54, wherein the first lookup table is indexed by using a number of bits from values of the first color element; and the second

lookup table is indexed by using the number of bits from values of the second color element.

Claim 59. (New) The method of claim 58, wherein the number of bits comprise a number of most significant bits.

Claim 60. (New) The method of claim 59, wherein remaining least significant bits of the first and second color elements are not utilized in generating the first and second converted color elements.